

CLAIMS

- ~~Sub 1~~ A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:
- 5 providing a plurality of input signal tuners;
wherein said tuners accept analog and digital television broadcast signals;
wherein each of said tuners is individually tuned to a specific broadcast signal;
converting analog television broadcast signals into a digital signal;
- 10 separating a digital signal or digital television broadcast signal into its video and audio components;
storing said video and audio components on a storage device;
providing an output device;
wherein said output device extracts a specific video and audio component from
- 15 said storage device;
decoding said specific video and audio components into a television output signal; and
sending said television output signal to a television monitor.
- 20 2. The process of claim 1, further comprising the step of:
inserting on screen displays into said television output signal.
- 25 3. The process of claim 1, further comprising the step of:
accepting control commands from a user.
4. The process of claim 3, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.
- 30 5. The process of claim 3, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.
- 35 6. The process of claim 3, wherein the user controls the decoding rate and direction of said decoding step to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.
7. The process of claim 1, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.

8. The process of claim 1, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.

5 9. The process of claim 1, further comprising the steps of:
extracting other signal components from said digital signal or said digital television broadcast signal;
wherein said storage step stores said other signal components on said storage device;
10 wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and
reproducing said associated signal components into their proper location in said television output signal.

15 10. An apparatus for simultaneous storage and playback of multimedia data in a computer environment, comprising:

a plurality of input signal tuners;
wherein said tuners accept analog and digital television broadcast signals;
wherein each of said tuners is individually tuned to a specific broadcast signal;
a module for converting analog television broadcast signals into a digital signal;
a module for separating a digital signal or digital television broadcast signal into its video and audio components;
a module for storing said video and audio components on a storage device;
an output device;
25 wherein said output device extracts a specific video and audio component from said storage device;
a module for decoding said specific video and audio components into a television output signal; and
a module for sending said television output signal to a television monitor.

30 11. The apparatus of claim 10, further comprising:
a module for inserting on screen displays into said television output signal.

12. The apparatus of claim 10, further comprising:
35 a module for accepting control commands from a user.

13. The apparatus of claim 12, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.

14. The apparatus of claim 12, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.

15. The apparatus of claim 12, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.

16. The apparatus of claim 10, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.

17. The apparatus of claim 10, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.

18. The apparatus of claim 10, further comprising:
a module for extracting other signal components from said digital signal or said digital television broadcast signal;
wherein said storage module stores said other signal components on said storage device;
wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and
a module for reproducing said associated signal components into their proper location into said television output signal.

19. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

providing a plurality of input signal tuners;

wherein said tuners accept analog and digital television broadcast signals;

wherein each of said tuners is individually tuned to a specific broadcast signal;

converting analog television broadcast signals into a digital signal;

storing said digital signals and digital television broadcast signals on a storage device;

providing a plurality of output devices;

wherein each of said output devices extracts a specific digital signal from said storage device;

decoding said specific digital signals into a television output signal;

sending said television output signal to a television monitor; and

wherein said plurality of output devices allows for a picture in a picture display on said television monitor.

20. The process of claim 19, further comprising the step of:
accepting control commands from a user.
- 5 21. The process of claim 20, wherein the user selects the picture in a picture option to
be displayed on said television monitor.
22. The process of claim 20, wherein the user selects which of said output devices
displays in said picture in a picture display.
- 10 23. The process of claim 20, wherein the user selects the display position of each
picture in the picture in a picture display.
24. The process of claim 20, wherein the user selects an individual tuner and the
specific broadcast signal for said individual tuner.
- 15 25. The process of claim 20, wherein the user selects a specific digital signal to be
extracted from said storage device and decoded.
- 20 26. The process of claim 20, wherein the user controls the decoding rate and direction
of said decoding step to perform variable rate fast forward and rewind, frame step,
pause, and play functions on said television output signal.
- 25 27. The process of claim 19, further comprising the step of:
inserting on screen displays into said television output signal.
28. The process of claim 19, wherein the specific broadcast signal for an individual
tuner is selected automatically based on the current date and time.
- 30 29. The process of claim 19, wherein the specific broadcast signal for an individual
tuner is selected automatically based on a particular word or phrase in said broadcast
signal.
- 35 30. An apparatus for simultaneous storage and playback of multimedia data in a
computer environment, comprising:
a plurality of input signal tuners;
wherein said tuners accept analog and digital television broadcast signals;
wherein each of said tuners is individually tuned to a specific broadcast signal;
a module for converting analog television broadcast signals into a digital signal;

a module for storing said digital signals and digital television broadcast signals on a storage device;
a plurality of output devices;
wherein each of said output devices extracts a specific digital signal from said storage device;
a module for decoding said specific digital signals into a television output signal;
a module for sending said television output signal to a television monitor; and
wherein said plurality of output devices allows for a picture in a picture display on said television monitor.

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31. The apparatus of claim 30, further comprising:
a module for accepting control commands from a user.
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32. The apparatus of claim 31, wherein the user selects the picture in a picture option to be displayed on said television monitor.
33. The apparatus of claim 31, wherein the user selects which of said output devices displays in said picture in a picture display.
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34. The apparatus of claim 31, wherein the user selects the display position of each picture in the picture in a picture display.
35. The apparatus of claim 31, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.
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36. The apparatus of claim 31, wherein the user selects a specific digital signal to be extracted from said storage device and decoded.
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37. The apparatus of claim 31, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.
38. The apparatus of claim 30, further comprising:
a module for inserting on screen displays into said television output signal.
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39. The apparatus of claim 30, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.

40. The apparatus of claim 30, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.

5. 41. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

providing a plurality of input signal tuners;

wherein said tuners accept analog and digital television broadcast signals;

wherein each of said tuners is individually tuned to a specific broadcast signal;

10 converting analog television broadcast signals into a digital signal;

separating a digital signal or digital television broadcast signal into its video and audio components;

storing said video and audio components on a storage device;

providing a plurality of output devices;

5 wherein each of said output devices extracts a specific video and audio component from said storage device;

decoding said specific video and audio components into a television output signal;

sending said television output signal to a television monitor; and

20 wherein said plurality of output devices allows for a picture in a picture display on said television monitor.

42. The process of claim 41, further comprising the step of:

accepting control commands from a user.

25 43. The process of claim 42, wherein the user selects the picture in a picture option to be displayed on said television monitor.

44. The process of claim 42, wherein the user selects which of said output devices displays in said picture in a picture display.

30 45. The process of claim 42, wherein the user selects the display position of each picture in the picture in a picture display.

35 46. The process of claim 42, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.

47. The process of claim 42, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.

48. The process of claim 42, wherein the user controls the decoding rate and direction of said decoding step to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.

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49. The process of claim 41, further comprising the step of:
inserting on screen displays into said television output signal.

50. The process of claim 41, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.

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51. The process of claim 41, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.

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52. The process of claim 41, further comprising the steps of:
extracting other signal components from said digital signal or said digital television broadcast signal;
wherein said storage step stores said other signal components on said storage device;
wherein each of said output devices extracts the associated signal components of said specific video and audio components from said storage device; and
reproducing said associated signal components into their proper location in said television output signal.

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53. An apparatus for simultaneous storage and playback of multimedia data in a computer environment, comprising:

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a plurality of input signal tuners;

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wherein said tuners accept analog and digital television broadcast signals;

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wherein each of said tuners is individually tuned to a specific broadcast signal;

a module for converting analog television broadcast signals into a digital signal;

a module for separating a digital signal or digital television broadcast signal into its video and audio components;

a module for storing said video and audio components on a storage device;

a plurality of output devices;

wherein each of said output devices extracts a specific video and audio component from said storage device;

a module for decoding said specific video and audio components into a television output signal;

a module for sending said television output signal to a television monitor; and
wherein said plurality of output devices allows for a picture in a picture display on
said television monitor.

- 5 54. The apparatus of claim 53, further comprising:
 a module for accepting control commands from a user.
- 10 N 55. The apparatus of claim 54, wherein the user selects the picture in a picture option
 to be displayed on said television monitor.
- 15 C1 56. The apparatus of claim 54, wherein the user selects which of said output devices
 displays in said picture in a picture display.
- 20 57. The apparatus of claim 54, wherein the user selects the display position of each
 picture in the picture in a picture display.
- 25 58. The apparatus of claim 54, wherein the user selects an individual tuner and the
 specific broadcast signal for said individual tuner.
- 30 59. The apparatus of claim 54, wherein the user selects a specific video and audio
 component to be extracted from said storage device and decoded.
- 35 60. The apparatus of claim 54, wherein the user controls the decoding rate and
 direction of said decoding module to perform variable rate fast forward and rewind, frame
 step, pause, and play functions on said television output signal.
- 40 61. The apparatus of claim 53, further comprising:
 a module for inserting on screen displays into said television output signal.
- 45 62. The apparatus of claim 53, wherein the specific broadcast signal for an individual
 tuner is selected automatically based on the current date and time.
- 50 63. The apparatus of claim 53, wherein the specific broadcast signal for an individual
 tuner is selected automatically based on a particular word or phrase in said broadcast
 signal.
- 55 64. The apparatus of claim 53, further comprising:
 a module for extracting other signal components from said digital signal or said
 digital television broadcast signal;

wherein said storage module stores said other signal components on said storage device;

wherein each of said output devices extracts the associated signal components of said specific video and audio components from said storage device; and

5 a module for reproducing said associated signal components into their proper location in said television output signal.

65. A process for simultaneous storage and playback of multimedia audio data in a computer environment, comprising the steps of:

10 providing at least one input signal tuner;

wherein said tuner accepts streaming audio signals, said streaming audio signals are in digital and analog form;

wherein said tuner is tuned to a specific streaming audio signal;

converting said streaming audio signals that are analog signals into a digital stream;

storing said digital stream and digital streaming audio signals on a storage device;

providing an output device;

wherein said output device extracts a specific digital stream from said storage device;

20 decoding said specific digital stream into an analog or digital audio output signal;

and

playing back said analog or digital audio output signal.

66. The process of claim 65, further comprising the step of:

accepting control commands from a user.

67. The process of claim 66, wherein the user selects an individual tuner and the specific streaming audio signal for said individual tuner.

30 68. The process of claim 66, wherein the user selects a specific digital stream to be extracted from said storage device and played back.

69. The process of claim 66, wherein the user controls the decoding rate and direction of said decoding step to perform variable rate fast forward and rewind, pause, and play functions on said analog or digital audio output signal.

70. An apparatus for simultaneous storage and playback of multimedia audio data in a computer environment, comprising the steps of:

at least one input signal tuner;

wherein said tuner accepts streaming audio signals, said streaming audio signals are in digital and analog form;

wherein said tuner is tuned to a specific streaming audio signal;

5 a module for converting said streaming audio signals that are analog signals into a digital stream;

a module for storing said digital stream and digital streaming audio signals on a storage device;

an output device;

10 wherein said output device extracts a specific digital stream from said storage device;

a module for decoding said specific digital stream into an analog or digital audio output signal; and

15 a module for playing back said analog or digital audio output signal.

20 71. The apparatus of claim 70, further comprising the step of:
accepting control commands from a user.

25 72. The apparatus of claim 71, wherein the user selects an individual tuner and the specific streaming audio signal for said individual tuner.

30 73. The apparatus of claim 71, wherein the user selects a specific digital stream to be extracted from said storage device and played back.

35 74. The apparatus of claim 71, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, pause, and play functions on said analog or digital audio output signal.

75. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

30 providing a plurality of input signal tuners;

wherein said tuners accept analog and digital television broadcast signals;

wherein each of said tuners is individually tuned to a specific broadcast signal;

converting analog television broadcast signals into a digital signal;

storing said digital signals and digital television broadcast signals on a storage device;

providing an output device;

wherein said output device extracts a specific digital signal from said storage device;

decoding said specific digital signals into a television output signal; and

sending said television output signal to a television monitor.

76. The process of claim 75, further comprising the step of:
inserting on screen displays into said television output signal.

5 X The process of claim 75, further comprising the step of:
accepting control commands from a user.

10 X 78. The process of claim 77, wherein the user selects an individual tuner and the
specific broadcast signal for said individual tuner.

a1 X 79. The process of claim 77, wherein the user selects a specific digital signal to be
extracted from said storage device and decoded.

15 X 80. The process of claim 77, wherein the user controls the decoding rate and direction
of said decoding step to perform variable rate fast forward and rewind, frame step,
pause, and play functions on said television output signal.

20 X 81. The process of claim 75, wherein the specific broadcast signal for an individual
tuner is selected automatically based on the current date and time.

25 X 82. The process of claim 75, wherein the specific broadcast signal for an individual
tuner is selected automatically based on a particular word or phrase in said broadcast
signal.

30 X 83. An apparatus for simultaneous storage and playback of multimedia data in a
computer environment, comprising:

 a plurality of input signal tuners;

 wherein said tuners accept analog and digital television broadcast signals;

35 X wherein each of said tuners is individually tuned to a specific broadcast signal;

 a module for converting analog television broadcast signals into a digital signal;

 a module for storing said digital signals and digital television broadcast signals on
a storage device;

 an output device;

 wherein said output device extracts a specific digital signal from said storage
device;

 a module for decoding said specific digital signals into a television output signal;

and

 a module for sending said television output signal to a television monitor.

- 1000 900 800 700 600 500 400 300 200 100
84. The apparatus of claim 83, further comprising:
a module for inserting on screen displays into said television output signal.
- 5 85. The apparatus of claim 83, further comprising:
a module for accepting control commands from a user.
86. The apparatus of claim 85, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.
- 10 87. The apparatus of claim 85, wherein the user selects a specific digital signal to be extracted from said storage device and decoded.
- 15 88. The apparatus of claim 85, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.
- 20 89. The apparatus of claim 83, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.
90. The apparatus of claim 83, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.
- 25 91. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:
providing a plurality of input signal tuners;
wherein said tuners accept analog and digital television broadcast signals;
wherein each of said tuners is individually tuned to a specific broadcast signal;
- 30 converting analog television broadcast signals into a digital signal;
separating a digital signal or digital television broadcast signal into its video and audio components;
decoding said specific video and audio components into a television output signal; and
- 35 sending said television output signal to a television monitor.
92. The process of claim 91, further comprising the step of:
inserting on screen displays into said television output signal.

93. The process of claim 91, further comprising the step of:
accepting control commands from a user.
94. The process of claim 93, wherein the user selects an individual tuner and the
specific broadcast signal for said individual tuner.
95. The process of claim 93, wherein the user controls the decoding rate and direction
of said decoding step to perform variable rate fast forward and rewind, frame step,
pause, and play functions on said television output signal.
96. The process of claim 91, wherein the specific broadcast signal for an individual
tuner is selected automatically based on the current date and time.
97. The process of claim 91, wherein the specific broadcast signal for an individual
tuner is selected automatically based on a particular word or phrase in said broadcast
signal.
98. The process of claim 91, further comprising the steps of:
extracting other signal components from said digital signal or said digital television
broadcast signal; and
reproducing said associated signal components into their proper location in said
television output signal.
99. An apparatus for simultaneous storage and playback of multimedia data in a
computer environment, comprising:
a plurality of input signal tuners;
wherein said tuners accept analog and digital television broadcast signals;
wherein each of said tuners is individually tuned to a specific broadcast signal;
a module for converting analog television broadcast signals into a digital signal;
a module for separating a digital signal or digital television broadcast signal into its
video and audio components
a module for decoding said specific video and audio components into a
television output signal; and
a module for sending said television output signal to a television monitor.
100. The apparatus of claim 99, further comprising:
a module for inserting on screen displays into said television output signal.
101. The apparatus of claim 99, further comprising:

a module for accepting control commands from a user.

102. The apparatus of claim 101, wherein the user selects an individual tuner and the specific broadcast signal for said individual tuner.

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103. The apparatus of claim 101, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.

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104. The apparatus of claim 99, wherein the specific broadcast signal for an individual tuner is selected automatically based on the current date and time.

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105. The apparatus of claim 99, wherein the specific broadcast signal for an individual tuner is selected automatically based on a particular word or phrase in said broadcast signal.

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106. The apparatus of claim 99, further comprising:
a module for extracting other signal components from said digital signal or said digital television broadcast signal; and

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a module for reproducing said associated signal components into their proper location in said television output signal.

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107. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

accepting analog and digital video streams;
converting analog video streams into a digital video stream;
separating a digital video stream into its video and audio components;
storing said video and audio components on a storage device;
providing an output device;
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wherein said output device extracts a specific video and audio component from said storage device; and
decoding said specific video and audio components into a television output signal.

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108. The process of claim 107, further comprising the step of:
accepting control commands from a user.

109. The process of claim 108, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.

110. The process of claim 108, wherein the user controls the decoding rate and direction of said decoding step to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.

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111. The process of claim 107, further comprising the steps of:
extracting other signal components from said digital video stream;
wherein said storage step stores said other signal components on said storage device;
10 wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and
reproducing said associated signal components into their proper location in said television output signal.

15 112. An apparatus for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

a module for accepting analog and digital video streams;
a module for converting analog video streams into a digital video stream;
a module for separating a digital video stream into its video and audio components;
20 a module for storing said video and audio components on a storage device;
an output device;
wherein said output device extracts a specific video and audio component from said storage device; and

25 a module for decoding said specific video and audio components into a television output signal.

113. The apparatus of claim 112, further comprising:

a module for accepting control commands from a user.

30 114. The apparatus of claim 113, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.

115. The apparatus of claim 113, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said television output signal.

116. The apparatus of claim 112, further comprising:

a module for extracting other signal components from said digital video stream;

wherein said storage module stores said other signal components on said storage device;

wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and

5 a module for reproducing said associated signal components into their proper location in said television output signal.

117. A process for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:

10 accepting analog and digital video streams;
converting analog video streams into a digital video stream;
separating a digital video stream into its video and audio components;
storing said video and audio components on a storage device;
providing an output device;
15 wherein said output device extracts a specific video and audio component from said storage device; and
decoding said specific video and audio components into a digital video output stream.

20 118. The process of claim 117, further comprising the step of:
delivering said digital video output stream to a receiver.

119. The process of claim 117, further comprising the step of:
displaying said digital video output stream.

25 120. The process of claim 117, further comprising the step of:
accepting control commands from a user.

121. The process of claim 120, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.

30 122. The process of claim 120, wherein the user controls the decoding rate and direction of said decoding step to perform variable rate fast forward and rewind, frame step, pause, and play functions on said digital video output stream.

35 123. The process of claim 117, further comprising the steps of:
extracting other signal components from said digital video stream;
wherein said storage step stores said other signal components on said storage device;

wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and

reproducing said associated signal components into their proper location in said digital video output stream.

- 5 124. An apparatus for simultaneous storage and playback of multimedia data in a computer environment, comprising the steps of:
- a module for accepting analog and digital video streams;
 - a module for converting analog video streams into a digital video stream;
 - 10 a module for separating a digital video stream into its video and audio components;
 - a module for storing said video and audio components on a storage device;
 - 15 an output device;
 wherein said output device extracts a specific video and audio component from said storage device;
 - a module for decoding said specific video and audio components into a digital video output stream; and
 - a module for displaying said digital video output stream.
- 20 125. The apparatus of claim 124, further comprising:
 a module for delivering said digital video output stream to a receiver.
- 25 126. The apparatus of claim 124, further comprising:
 a module for displaying said digital video output stream.
127. The apparatus of claim 124, further comprising:
 a module for accepting control commands from a user.
- 30 128. The apparatus of claim 127, wherein the user selects a specific video and audio component to be extracted from said storage device and decoded.
129. The apparatus of claim 127, wherein the user controls the decoding rate and direction of said decoding module to perform variable rate fast forward and rewind, frame step, pause, and play functions on said digital video output stream.
- 35 130. The apparatus of claim 124, further comprising:
 a module for extracting other signal components from said digital video stream;
 wherein said storage module stores said other signal components on said storage device;

wherein said output device extracts the associated signal components of said specific video and audio components from said storage device; and
a module for reproducing said associated signal components into their proper location in said digital video output stream.

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